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in furthering the objects which the Academy have done so much to promote, I cannot but feel assured that Mr. Waterhouse, who has derived a great pecuniary benefit from our exertions to create an interest in such remains, will feel it due to us, in return, to give a deaf ear to all temptations to seduce him to let this brooch out of Ireland, and that he will have a pleasure, as well as feel it his interest, to see it placed in its proper depository."

Dr. Apjohn made an oral communication in relation to a process recently employed by him for the artificial production of valerianic acid.

He stated that, as must be well known to many members of the Academy, the root of the *Valerianas officinalis*, or native plant, is much employed for medical purposes, and that different pharmaceutic processes have been devised for extracting from it powerful antispasmodic medicines. Now, of the substances existing in the root, and which admit of being separated from it, the most remarkable are a peculiar volatile oil, and an acid of a fatty nature; the former being the essential oil of valerian, the latter the valerianic acid. The valerianic medicines of the Pharmacopœia contain both these, and the therapeutic virtues they exert, they owe, undoubtedly, to these principles. Reasoning from these facts, Prince Lucien Bonaparte, who is well known to have devoted much attention to certain departments of chemistry, first suggested the manufacture of the valerianates as curative agents, and their introduction into medical practice. But there is one great difficulty in the way of employing these salts extensively in the treatment of disease; they are very expensive, the cheapest of them, the valerianate of zinc, costing so much as eighteen or twenty shillings an ounce. It may be added that, from their high cost, a strong inducement exists to their fraudulent adulteration; and that, in point of fact, much of the valerianate of zinc at present in the market is nothing but the *butyrate* of the same metal, upon which a very minute quantity of a spirituous solution of the oil of valerian has been poured. Impressed with the conviction that, as long as valerianic acid is derived from the root of the valerian, the price of the valerianates could not be materially reduced, and occupied, at the desire of the College of Physicians, with the task of bringing out a new edition of the Dublin Pharmacopœia, it became his duty to inquire whether valerianic acid could not be obtained from some other source, and at such reduced cost as would permit of the valerianates being more generally used in the practice of medicine.

The well-known method of Dumas and Stass was first tried, which consists in passing the vapour of fusel oil over the hydrate of potash at a certain temperature, but the result was such as to forbid its being recommended as a pharmaceutic process. The conversion, however, of fusel oil, $C_{10}H_{11}O$, HO, into valerianic acid, $C_{10}H_9O_3$, HO, being obviously a process of oxidizement, it naturally occurred to him to try whether the oxidation in question could not be effected by agents frequently applied in other departments of organic chemistry to a similar purpose, viz., bichromate of potash and oil of vitriol; and upon subjecting, in November, 1847, this idea to the test of experiment, operating on small quantities, a tolerably satisfactory result was obtained. The subject, however, was not then prosecuted further; but as the Pharmacopœia approached completion, he had again to return to it, and working with the same materials, but by a somewhat different method, he had such success as, he conceived, would justify him in communicating his results to the public, through the medium of the Academy. The following process succeeds well:

Take of Bichromate of potash, nine ounces;
Oil of vitriol, six and a half fluid ounces;
Fusel oil, four fluid ounces;
Water, half a gallon:

Dilute the oil of vitriol with a pint, and dissolve the bichromate of potash, with the aid of heat, in the remainder of the water; and, when both solutions have cooled to 80°, mix, and having then added the fusel oil, shake the mixture, and continue the agitation until the temperature, which at first rises to 150°, has fallen to 70° or 80°. Draw over now by distillation about half a gallon of liquid, and having saturated this with caustic soda, and separated any unoxidated fusel oil, evaporate down to about the bulk of four ounces, and, placing the valerianate of soda in a retort, with an equivalent quantity of oil of vitriol diluted with twice its bulk of water, again distil. The valerianic acid thus obtained, when rendered anhydrous by the usual methods, was found to have the same chemical composition, specific gravity, and boiling point, with the acid extracted directly from the root of the valerian, so that there can be no doubt of their identity.

The fusel oil used in his experiments is found in the spent wash of the distillers, from which it may be separated by continuing the distillation after the spirit has ceased to come over. The discovery of it in this liquid Dr. Apjohn stated that he communicated to the Academy so far back as the year 1840.

The valerianates of zinc, quina, and iron, should be prepared from the valerianate of soda by double decomposition. The valerianate of zinc may also be made by neutralizing valerianic acid with the hydrated carbonate of zinc; but this direct method is scarcely applicable in the case of the two other salts.

Dr. Apjohn, in conclusion, stated that he did not claim to be original in converting fusel oil into valerianic acid, such having been previously effected through the agency of potash. At the time, however, he first accomplished this metamorphosis (November, 1847), by the oxidating influence of chromic acid, he was not aware that such method had been tried by any other chemist; and the attempts since made on the Continent would seem not to have been very successful, as Regnault, in his fourth volume, not long since published, immediately after describing a process of this kind, observes, "that the best process still for the conversion of fusel oil into valerianic acid is that by potash, originally given by Dumas and Stass."

On the part of Richard Caulfield, Esq., the Secretary exhibited an inscription on a silver ring found in the county Galway: the letters are as follows:

✠ AVENMGAONEAIME.

He also presented, on the part of the same gentleman, a lithograph representing a silver buckle, and other ornaments, in the possession of Thomas Ronayne Sarsfield, Esq.; and a rubbing from a stone in the church of Mallow, with the following inscription: "Hic jacet Jacobus filius Wilhelme de Barry, in temporalibus dominus Kilmaclenyn."

In the absence of Dr. Stokes, Dr. Petrie presented, from Rev. William Demoleyns, to the Museum, a large bronze vessel, found in the lands of Lahern, in the parish of Killorglan, in the county of Kerry, in 1849.

Rev. Charles Graves, on the part of Sir Robert Gore Booth, M. P., presented an ancient wooden crucifix, found in a font in the demesne of Lissadell, County Sligo.

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January 13, 1851.

JOHN ANSTER, LL. D., Vice-President,
in the Chair.

Sir Francis Waskett Myers, Bart.; Rev. Orlando Dobbin, LL.D.; Samuel Gordon, M.D.; Daniel Griffin, M.D.; Ewing Whittle, M. D.; St. George Williams, M.D.; Robert Clayton Browne; James Gibson; Henry Hennessy; Andrew John Maley; and William Harvey Pim, Esquires, were elected Members of the Academy.